

Weekly Report – week of July 11, 2011
Fabrication and Assembly of ERL hardware
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Cryogenics: Transfer lines cryoplant side: Weld inspection of process lines, 5 welds to be inspected. Schedule for next week pressure and leak check, followed by vacuum field joint close out. Scheduling pressure test for Main helium compressor piping before a spin test is done. Return gas heater vacuum jacketed housings for 5K intercepts cold gas return: Design is completed. Detailing needs to be done and drawings to be released for procurement.

Controls: Functionality additions were made to the software supporting RF signal generator and Peak RF Power Meter equipment while preparations for initial power supply testing continued.

Instrumentation: Fabrication of the lot of PMT based beam loss detectors is underway while their integration with RHIC beam loss electronics continues. A survey of existing cables and the preliminary rack layout is leading up to installation of equipment in the rack line-up. A preliminary optics design now accompanies the maturing design by BNL of the two plunging profile monitors in the zig-zag transport. The ICT electronics, for pulsed beam charge measurement, have been tested & are ready for installation. A Controls interface document is being prepared for the current transformers and Faraday Cup electronics. Assembly of the Faraday Cup amplifier pcb modules is underway. Two multichannel motion control chassis with drivers for motion of beam components have been completed and installed along with a VME crate to house the controllers. Testing is underway of the new interface for the piezo motor controlled mirrors for the SCRF gun laser transport line. Beam profile data published by FNAL (PAC11 MOP219) is being reviewed which describes the performance of the NML prototype profile monitor station which has many similarities to the ERL profile monitors now in fabrication, and are produced by the same vendor. The Libera BPM electronics integration and testing continues with the prototype module.

FPC conditioning: The ERL FPC is being tested. Repair work to klystron filament transformer and part replacement purchase order submitted. We have reached 250kW and a pulse length of 0.5ms. We will continue conditioning to reach CW.

Photocathode: Vacuum in source arms continues to drop. High temperature bakes still in process.

Gun Cryomodule: The gun assembly is being processed at J-Lab with string assembly to follow. The transport cart upgrade components are being assembled for testing.

Mezzanine: Review of 3 RFP's for the installation of a clean room under the mezzanine is complete. A meeting will be scheduled to review the comments of the evaluation committee.

Large Grain Gun: Modified top plate expected to return next week. Stand components are in and evaluation of assembly to be done this week. Final processing on large-grain gun being carried out at Jefferson Laboratory. This work has been delayed by equipment problems with BCP apparatus. Jefferson Laboratory personnel are working to resolve the issue. Power cables have arrived to provide power to blockhouse testing facility. Low power coupler design is being finalized and prepared for fabrication.

5-Cell Cavity/Cryomodule: Testing of the cryomodule allowed the first use of the low level RF system.

ERL Injection Line: Vacuum envelope is in preparation to final review, correction magnets are under design.

ERL Extraction Line: Magnets are being fabricated; beam dump pressure vessel code compliance complete, vacuum/instrumentation layout will be reviewed and finalized.